

REMARKS

Claims 20-31 are pending and stand ready for further action on the merits. Support for new claim 29 can be found on page 4, line 15 to page 6, line 18. Support for new claim 30 can be found on page 7, lines 25-27. Support for new claim 31 can be found on page 9, lines 9-13. No new matter has been added by way of the above-amendment. The above-amendment neither reduces the scope of the invention nor has been made for the sake of patentability.

JP 61-110 8700 (JP '700), Lohr et al. (U.S. Patent 4,347,151),
Wong et al. (U.S. Patent 5,213,588) and Feig (U.S. Patent
3,711,884)

The Examiner has maintained the rejection under 35 U.S.C. 103(a) of claims 20-28 over JP '700 in view of Lohr et al. Applicants respectfully traverse the rejection.

JP '700 discloses a wet wiping material comprising a web impregnated with a liquid material comprising plant gum, a surfactant having cleansing power, silicone oil, ethyl alcohol and water. The wet wiping material is taught to be used to clean "things soiled by oil in daily life or oil dirt evolved in industry". To meet this objective, JP '700 incorporates surfactants which have a high ability to dissolve or decompose oily spots. The degree of dissolution of oily spots is evaluated in each of the working examples of JP '700. The oils that were evaluated

include a mixture of soybean oil and beef tallow and a mixture of machine oil and grease oil.

Thus, JP '700 has prepared the cleaning article in such a way as to target the removal of oily stains and **JP '700 fails to teach or suggest the use of solid abrasive particles** for the removal of soil and dirt, as presently claimed.

Unexpected Results

The present inventors have shown that including the soft abrasive particle in the detergent-impregnated article, gives the article improved properties which would not be expected based upon the art. Specifically, the following table shows the difference in the effect of using a detergent-impregnated article which contains soft abrasive particles versus the detergent-impregnated article which does not contain these soft abrasive particles.

Table^A

	Dynamic Friction Coefficient in Wiping	Degree of Streaks (Gloss)	Static Friction Coefficient of Cleaned Surface	Degree of Staining (%)
Example 1	0.20	114	0.25	17
Comparative Example 1	0.50	110	0.30	21

A = The data can be found on page 31 of the specification.

As can be seen from the above Table, Inventive Example 1 which contains the solid abrasive particles, has an improved dynamic

friction coefficient in wiping, degree of streaks, static friction coefficient of cleaned surface and degree of staining over Comparative Example 1 which does not contain the solid abrasive particles. Such an improvement would not be expected based on the disclosure of JP '700.

It is believed that the cleaning mechanism of soil or dirt in JP '700 is entirely different from that of the claimed invention. This distinction in cleaning mechanisms is manifested in the difference between the composition of the inventive cleaning article and the composition of the article of JP '700.

The Examiner, aware of the deficiencies of JP '700, cites Lohr et al. to cure the deficiencies. Applicants respectfully submit that Lohr et al. fail to cure the deficiencies of JP '700.

Lohr et al. fail to teach or suggest the improved properties (dynamic friction coefficient in wiping, degree of streaks, static friction coefficient of cleaned surface and degree of staining) in the detergent-impregnated article as shown by the present inventors when the detergent-impregnated article includes solid abrasive particles, as presently claimed. Accordingly, if a *prima facie* case of obviousness actually existed, Applicants respectfully submit that the experimental evidence in the specification overcomes the *prima facie* case.

Wong et al. Do Not Recognize Concentration As Result Effective Variable

In Applicants' April 15, 2002 Amendment, Applicants argued that Lohr et al. teach away from the use of the inventive detergent-impregnated article comprising 1-10 wt% of abrasive particles, since Lohr et al. prefer to use the abrasive agent in a relatively large amount of 10 to 15 wt%. The inventive detergent-impregnated article would have advantageous properties over the article of Lohr et al., since such a high concentration range of the abrasive agent would lead to scratches on the surface to be cleaned.

In response to Applicants' assertion that Lohr et al. teach away from the inventive concentration range of the abrasive particles, the Examiner cites Wong et al. for teaching that the amount of scratches depends on the **shape** of the abrasive particles relative to the surface of the substrate to be cleaned, and not on the concentration of the abrasive particles. The Examiner directs Applicants' attention to column 6, lines 3-10 of Wong et al.

Applicants respectfully submit that it is unclear why the Examiner is referring to Wong et al., since **Wong et al. is not currently included in the rejection.**

Also, it appears that the Examiner has admitted that the **abrasive particle concentration is not a result effective variable.** Any variable that changes the properties of the composition is

considered to be a result effective variable. According to the Examiner it would be obvious to the artisan to modify a result effective variable, *in the absence of an explicit teaching or suggestion within a cited reference*, since there would be a reasonable expectation that modifying the result effective variable would lead to improved properties of the composition. However, Applicants respectfully submit that the art must recognize that a particular variable is a result effective variable to establish a *prima facie* case of obviousness.

In the present case, if we are to assume that the Examiner's assertion about the teachings of Wong et al. is correct, it would not be obvious to the skilled artisan to modify the concentration of the abrasive particles of Lohr et al., since **the art has not recognized the concentration to be a result effective variable**. In other words, if the Examiner's assertion is correct that the art recognizes that the particle shape of the abrasive particles influence the abrasivity and not the concentration of the abrasive particles, then the skilled artisan would not be motivated to modify the concentration of the particles to obtain an optimum concentration.

Pencil Hardness Of Abrasive Particles

In addition, Applicants note that Wong et al. teach that the abrasive particles have a Knoop hardness of 4-25, and Wong et al.

fail to teach or suggest that the abrasive particles have a pencil hardness of 6B to 9H, as presently claimed.

The pencil hardness is a measure representing resistance to scratch when the surface of a sample is scratched with a sharp-pointed pencil and scratches are marked on the surface. On the other hand, Knoop hardness is a measure representing resistance to collapse or breakage and is shown by the collapsed area of a sample when the sample is pressed by a stylus having a diamond tip. Thus, the correlation between the pencil hardness and Knoop hardness is definitely unknown. Considering the large difference in hardness between the materials used for measurement, i.e., pencil vs. diamond, the pencil hardness may be used to represent hardness of relatively softer materials like coated materials. Accordingly, the skilled artisan would be motivated to pick harder materials than the inventive abrasive particles, since the fact that Wong et al. measures the hardness of the abrasive particles using Knoop hardness implies that the abrasive particles are hard.

Thus, Wong et al. do not cure the deficiencies of the combination of Lohr et al. and JP '700, since none of the cited references teach or fail to suggest that the abrasive particles have a pencil hardness of 6B to 9H, as presently claimed.

Size Of Particles As Recited In Present Claim 24

Applicants note that JP '700 and Lohr et al. are silent with respect to the inventive particle size range of 0.1 to 100 microns as described in present claim 24. The Examiner notes this deficiency and cites Feig for teaching that the particle size range is 1.5 to 60 microns.

First, Applicants respectfully submit that it is unclear whether Feig is actually part of the rejection, since the Examiner has not stated that the claims are rejected over Feig. It is appropriate for an Examiner to refer to a tertiary reference which is not included in the rejection to explain matters which are unclear in the teachings of the cited references, but it is not appropriate for the Examiner to include a tertiary reference to teach a limitation of the claim. Accordingly, should the Examiner maintain this position, Applicants respectfully request that the Examiner mails a Non-Final Office Action wherein a rejection including Feig is recited.

Second, Applicants respectfully submit that if Feig were included in the rejection, Feig would actually teach away from the presently claimed detergent-impregnated article which comprises the solid abrasive particles in an amount of 1 to 10% by weight. Feig does not generically teach a concentration range of the abrasive particles, therefore, the skilled artisan must rely on the examples of Feig for guidance in preparing a detergent-impregnated article

with solid abrasive particles. In examples II and IV, there is no overlap with the claimed concentration range. Although it is unclear with respect to example I, there may be no overlap.

Also, the abrasive particles used in the examples of Feig are fixed to fabrics by subjecting a pasty composition containing such particles prior to drying. In contrast, in the present invention, the impregnated article is in a wet state and the solid abrasive particles are supplied from the article onto a surface to be cleaned.

Accordingly, significant patentable distinctions exist between Feig and the inventive detergent-impregnated article, and Feig fails to cure the deficiencies of the combination of Lohr et al. and JP '700.

Requested Action By The Examiner

In view of the forgoing, Applicants respectfully submit that a *prima facie* case of obviousness cannot be said to exist over the combination of JP '700 in view of Lohr et al., and withdrawal of the rejection is respectfully requested.

New Claim 29

Regarding new claim 29, new claim 29 is patentable over the cited references, since new claim 29 is limited to a detergent-

impregnated article wherein the solid abrasive particles do not include as a possibility, aluminosilicate or diatomaceous earth.

Conclusion

In view of the above-amendments and comments, Applicants respectfully submit that the claims are in condition for allowance. A notice to such effect is earnestly solicited.

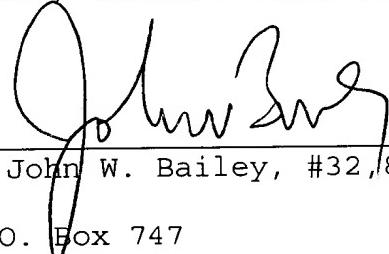
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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